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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,182	03/15/2004	Peter Aschenbrenner	10031.000600 (S0034)	2243

31894 7590 12/04/2006  
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EXAMINER
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FICK, ANTHONY D

ART UNIT	PAPER NUMBER
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1753

DATE MAILED: 12/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/801,182

Applicant(s)

ASCHENBRENNER, PETER

Examiner

Anthony Fick

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1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date 6/28/04 8/25/06.

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities: on page 7, line 1, frame is misspelled as "fame".

Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 4 through 7, 10 through 13 and 15 through 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Rawlings (U.S. 5,338,369).

Rawlings discloses roof integratable photovoltaic modules as shown in figures 1 and 2.

Regarding claim 1, figure 2 shows a frame for holding a photovoltaic module, the frame comprising a plurality of air vents within a perimeter of the frame member, vents 12 which extend throughout the frame, and having a mounting portion configured to allow for attachment to a roof, portion 27 or portion 21.

Regarding claim 4, the frame in figure 2 has a mounting portion including an outer lip facing an exterior of the frame and having a provision for roof attachment, 27 with holes 17 for roof attachment.

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Regarding claim 5, Rawlings discloses multiple modules, see figure 3, each having the plurality of air vents within the frame as the first module shown in figure 2. Rawlings also discloses that multiple rows of modules can be placed on a roof adjoining vertically (column 7, paragraph 3) thus having two modules in line such that air flows from under the first to under the second through the air vents.

Regarding claims 6 and 7, figures 3, 3B and 4 show the mounting hardware utilized by Rawlings that attaches outer lips of the frame members together using a clip clamping the outer lips.

Regarding claim 10, Rawlings discloses the frame can be extruded (column 4, paragraph 12).

Regarding claim 11, Rawlings discloses the use of typical photovoltaic elements (column 6, paragraph 5). These cells have an electrode on the backside of the cell and thus have a backside contact.

Regarding claim 12, figure 2 shows a frame for holding a photovoltaic module, the frame comprising a plurality of air vents within a perimeter of the frame member, vents 12 which extend throughout the frame, and having a mounting portion configured to allow for attachment to a roof, portion 27 or portion 21.

Regarding claim 13, the frame in figure 2 has a mounting portion including an outer lip facing an exterior of the frame and having a provision for roof attachment, 27 with holes 17 for roof attachment and attachment to another frame.

Regarding claim 15, Rawlings discloses the frame can be extruded from one or several pieces (column 4, paragraph 12).

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Regarding claim 16, Rawlings discloses the modules can be attached into roof sheathing and/or roof framing members (column 5, paragraph 3). The roof sheathing reads on a substructure that is attached to the roof.

Regarding claim 17, Rawlings discloses the use of typical photovoltaic elements (column 6, paragraph 5). These cells have an electrode on the backside of the cell and thus have a backside contact.

Regarding claim 18, Rawlings also discloses a method of installing photovoltaic modules on a roof. Figure 2 shows a frame for holding a first photovoltaic module, the frame comprising a plurality of air vents within a perimeter of the frame member, vents 12 which extend throughout the frame, and having a mounting portion configured to allow for attachment to a roof, portion 27 or portion 21. Rawlings discloses multiple modules, see figure 3, each having the plurality of air vents within the frame as the first module shown in figure 2. Rawlings also discloses that multiple rows of modules can be placed on a roof adjoining vertically (column 7, paragraph 3) thus having two modules in line such that air flows from under the first to under the second through the air vents.

Regarding claim 19, figures 3, 3B and 4 show the mounting hardware utilized by Rawlings that attaches outer lips of the frame members together using a clip clamping the outer lips.

Regarding claim 20, Rawlings discloses the frame can be extruded and formed from a lightweight metal such as aluminum (column 4, paragraph 12).

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4. Claims 12 through 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Uchihashi et al. (U.S. 5,951,785).

Uchihashi discloses a photovoltaic module. One example of the module is shown in figure 25.

Regarding claim 12, figure 25 shows a module with a frame surrounding and supporting the module, the frame having a plurality of air vents within a perimeter of the frame, 50g, and a mounting portion, 50f, to allow attachment to the roof.

Regarding claims 13 and 14, Uchihashi has a plurality of embodiments that show both the outer lip configured to allow attachment of the frame to another frame or to the roof, figures 11, 15 and 17, and the inner lip configured to allow attachment to a substructure, figures 21 and 25.

Regarding claim 15, Uchihashi discloses forming the frame and hence the air vents from an aluminum extruded material (column 10, paragraph 1).

Regarding claim 16, figure 21 shows the frame attached to a substructure that is attached to the roof, 61.

Regarding claim 17, figure 1 shows the solar cells electrical contact is pulled off the back of the cell, thus the cells have a backside contact.

Regarding claim 18, Uchihashi further discloses forming multiple modules with air vents and installing such that air flows through multiple modules, see figures 13, 16 and 26.

Regarding claim 19, figures 26 and 27 show installation of two modules by clamping the frame members together.

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Regarding claim 20, Uchihashi discloses forming the frame from an aluminum-extruded material (column 10, paragraph 1).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 through 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchihashi et al. (U.S. 5,951,785) in view of Rawlings (U.S. 5,338,369).

Uchihashi discloses a photovoltaic module as shown in figures 3 and 25.

Regarding claim 1, figure 25 shows a module with a frame surrounding and supporting the module, the frame having a plurality of air vents within a perimeter of the frame, 50g, and a mounting portion, 50f, to allow attachment to the roof.

Regarding claims 2, 3 and 4, Uchihashi has a plurality of embodiments that show both the outer lip configured to allow attachment of the frame to another frame or to the roof, figures 11, 15 and 17, and the inner lip configured to allow attachment to a substructure, figures 21 and 25.

Regarding claim 5, Uchihashi further discloses forming multiple modules with air vents and installing such that air flows through multiple modules, see figures 13, 16 and 26.

Regarding claims 6 and 7, figures 26 and 27 show installation of two modules by clamping the frame members together with mounting hardware.

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Regarding claims 8 and 9, figures 4 through 8 show the frame includes a slot for accepting and supporting an edge of the photovoltaic module as well as showing the slot runs along the length of the frame member.

Regarding claim 10 Uchihashi discloses forming the frame from an aluminum extruded material (column 10, paragraph 1).

Regarding claim 11 figure 1 shows the solar cells electrical contact is pulled off the back of the cell, thus the cells have a backside contact.

The difference between Uchihashi and the claims is the requirement that each frame member has a plurality of air vents. The figures only show air vents within a single side of the frame.

Rawlings teaches roof integratable photovoltaic modules as shown in figures 1 and 2. Figure 2 shows a frame for holding a photovoltaic module, the frame comprising a plurality of air vents within a perimeter of the frame member, vents 12 which extend throughout the frame, and having a mounting portion configured to allow for attachment to a roof, portion 27 or portion 21.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize air vents in each frame member as in Rawlings within the modules of Uchihashi because the vents allow cooling air to flow underneath the photovoltaic cells uninterrupted (Rawlings column 5, paragraph 1) and thus cool the solar cells and help to maintain high power output and voltage of the module (Rawlings column 3, paragraph 5). Because Rawlings and Uchihashi are both concerned with



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photovoltaic modules, one would have a reasonable expectation of success from the combination. Thus the combination meets the claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Fick whose telephone number is (571) 272-6393. The examiner can normally be reached on Monday thru Friday 7 AM to 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Anthony Fick *ADF*  
AU 1753  
November 24, 2006

  
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